TYLER REFRIGERATION

Carrier
A United Technologies Company

ALPINE SERIES

Supplemental Installation & Service Manual

P5NGN with Remote Condensing Unit

NARROW GLASS DOOR PLATFORM MERCHANDISERS
Medium Temp Cases With Reversible Doors

This supplemental manual has been designed to be used in conjunction with the Case Specific and General (UL/NSF) Installation & Service Manual. Save the Instructions in these Three Manuals for Future Reference!!

This merchandiser conforms to the American National Standard Institue & NSF International Health and Sanitation standard ANSI/NSF 7 - 2003.

PRINTED IN IN U.S.A.	Specifications subject to change without notice.	REPLACES EDITION	12/06	ISSUE DATE	3/08	PART NO.	2003564	REV.	B

CONTENTS

The following Medium Temperature Glass Door Platform Merchandiser models are covered in this manual:

MODEL	DESCRIPTION
P5NGN2	**2-DR, NARROW GLASS DOOR PLATFORM MERCHANDISERS (with Remote Condensing Unit)(64-5/16")**
P5NGN3	**3-DR, NARROW GLASS DOOR PLATFORM MERCHANDISERS (with Remote Condensing Unit)(95")**

SPECIFICATIONS

P5NGN (RCU) Narrow Glass Door Med Temp Platform Merchandisers

Refrigeration & Defrost Data:

CASE USAGE	REFRIGERANT (R-404A) DESIGN PRESSURE		DISCHARGE AIR		DEFROSTS		THERMOSTAT SETTINGS		REFRIGERATION CHARGE (LBS / CASE)	
	LOW SIDE (PSIG)	HIGH SIDE (PSIG)	TEMPERATURE (°F)	VELOCITY (FPM)	DEFROSTS PER DAY	DURATION TIME (MIN.)	CUT-IN (°F)	CUT-OUT (°F)	P5NGN2	P5NGN3
P5NGN	183	400	+34	235	1	60	34	32	10.0	11.9

Electrical Data:

CASE ELECTRICAL CIRCUITS: One 115V, 1 Phase, 3 Wire Electrical Power Supply is required for cases with Remote Condensing Units. This 115V Power Supply provides power to a 115 VAC Condensing Unit, Condenser Fan, Condensate Evaporation Pan Heaters (if required), Condensate Pump (if required), Evaporator Fans, Lights and Anti-Sweat Heaters.

Electrical Data with Remote Condensing Unit (115 Volt)

MODEL	REMOTE CONDENSING UNIT COMPRESSOR			M.C.A.*** (with Evap. Pan)	M.C.A.*** (without Evap. Pan)	M.O.P.**** (with Evap. Pan)	M.O.P.**** (without Evap. Pan)
	UNIT	R.L.A.*	L.R.A.**	AMPS	AMPS	AMPS	AMPS
P5NGN2	115V 60Hz 1 Ph, 1/4 HP	8.0	34.6	18.9	14.7	25.0	20.0
P5NGN3	115V 60Hz 1 Ph, 1/3 HP	6.0	29.0	18.3	14.1	20.0	20.0

* Rated Load Amperage (compressor).
** Locked Rotor Amperage.
*** Minimum Circuit Ampacity (includes all electrical components and options; condenser fans, evaporator fans, compressor unit, condensate evaporation pan heater, condensate pump, lights & anti-sweats)
**** Maximum Overcurrent Protection.

Evaporator Fans and Lighting with Electronic Ballasts (115 Volt)

MODEL	NO. OF DOORS	FANS / CASE	TOTAL STANDARD FANS		TOTAL ECM FANS		VERTICAL T-8 LIGHTING (58-WATT)	
			AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
P5NGN2	2	2	1.06	96.0	0.64	34.0	1.45	174.0
P5NGN3	3	3	1.59	144.0	0.96	51.0	1.94	233.0

Heaters (115 Volt)

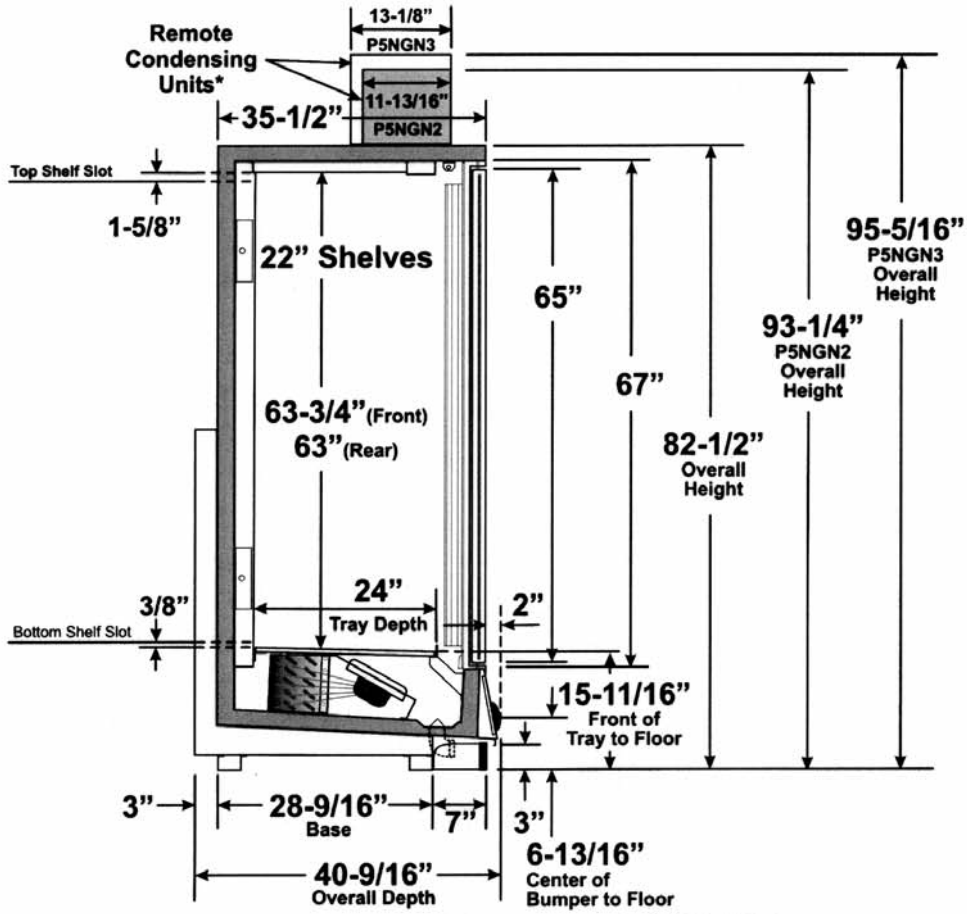
MODEL	NO. OF DOORS	ANTI-SWEAT HEATERS (115 V)			
		MAIN FRAME		ANTHONY 101	
		AMPS	WATTS	AMPS	WATTS
P5NGN2	2	0.64	76.8	0.74	88.8
P5NGN3	3	1.00	120.0	1.11	133.2

120 Volt, 20 Amp Male Plug NEMA No: **L5-20P** (for remote condensing unit without evaporator pan heater).

UL SANITATION approved in accordance with ANSI/NSF - 7.

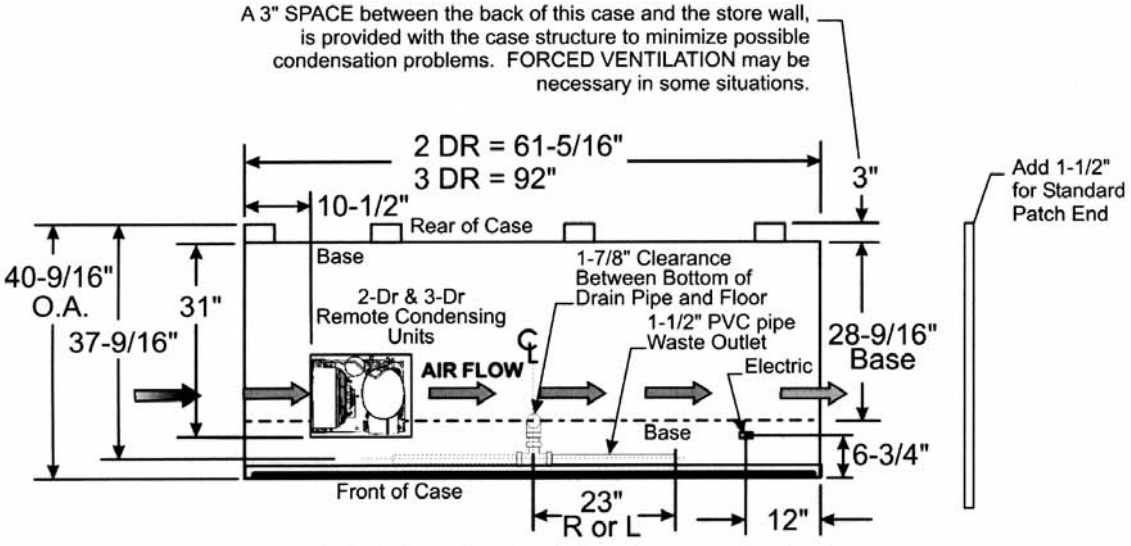
CASE BTUH REQUIREMENTS are calculated to produce approximately the indicated entering-air temperature with absolute maximum operating ambient limits of **75°F & 55RH.**

P5NGN CROSS SECTION (with Remote Condensing Unit)



*** NOTE: Remote condensing units ship loose and require field installation.**

P5NGN FLOOR PLAN (with Remote Condensing Unit)



NOTE: Refrigeration piping to remote condensing unit on top of case is through top right rear corner of case.

INSTALLATION PROCEDURES

Carpentry Procedures

Case Line-Up

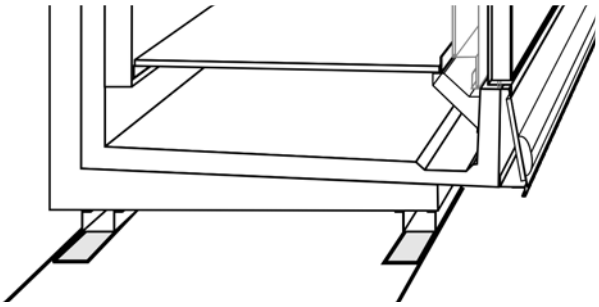
The P5NGN (RCU) has been designed as a stand alone case. Before setting this case, review the store layout floorplans and survey the areas where these individual cases are going to be installed.

WARNING

These cases are very heavy and require two or more people to move and/or position them. Improper handling of these cases could result in personal injury.

NOTE

The rear structure design of these cases automatically provides a 3" minimum air space between the back and store walls. This air space minimizes possible condensation problems. Forced ventilation might be necessary in some situations.



1. Snap chalk lines where the front and rear base rails of the cases are to be located.

NOTE

Front and rear edges of base rails should always be used to line-up cases. 6" shims allow base rails to be shimmed to level the case.

2. Locate highest point on chalk lines as a reference for determining the number of shims to be placed under the case base rails. Position the case on the chalk lines and shim case supports as required. Check leveling at hand rails and top of case and back of case.

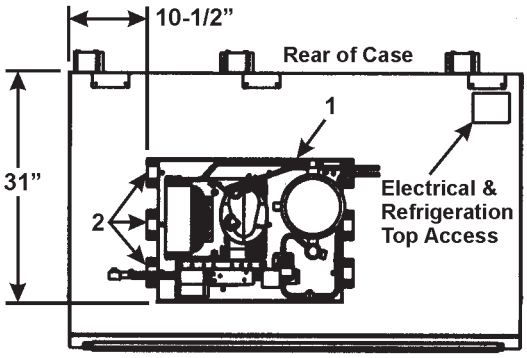
NOTE

Cases are shipped with patch ends installed, so caulking will not be needed.

Remote Condensing Unit Installation

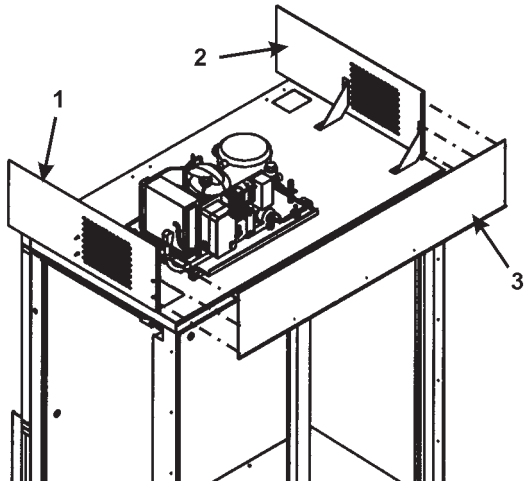
WARNING

The condensing unit assembly is very heavy and require two or more people to move and/or position them. Improper handling of this assembly could result in personal injury.



1. Carefully position remote condensing unit assembly (1) on the top of the case. This unit should be positioned 10.5" from the left edge of the case and the front corner of the unit should be 31" from the rear of the case.
2. Secure condensing unit assembly (1) to top of case with twelve supplied self-tapping screws thru both ends of the three bottom support rails (2).
3. Connect refrigeration lines and electrical connections to lines and connections in right top rear corner of the case.
4. After connections are complete, make sure the remote condensing unit is properly charged with R-404A refrigerant. See chart on page 3.

Front & Side Facia Installation



1. Install LH facia assembly (1) to top of case with four self-tapping screws.
2. Install RH facia assembly (2) to top of case with four self-tapping screws.
3. Install front facia (3) to front edge of LH and RH facia assemblies (1 & 2) and secure with seven self-tapping screws.

NOTE

The LH & RH fascia assemblies were designed to be used with rear wall fan kits. The remaining rear close-offs will come with the rear wall fan kits.

Front Cladding Installation

NOTE

See "Case Specific I&S Manual for front cladding installation instructions.

Refrigeration Procedures

NOTE

See "General-UL/NSF I&S Manual" for all other refrigeration procedure information.

P5NGN with Remote Condensing Unit

This case operates just like the standard P5NGN cases with the exception that the refrigeration for this case is being suppied by a remote condensing unit that is mounted to the top of the case. The temperature sensor locations and defrost control strategy can be found in the P5FG/P5FGN/P5NG/P5NGN Installation & Service Manual (P/N: 2000275).

Electrical Procedures

Electrical Considerations

Case Fan Circuit

This circuit is to be supplied by an uninterrupted, protected 120V circuit.

Fluorescent Lamp Circuit

The standard case lighting system is T-8 Electronic Vertical (Prism) lamps. The standard lighting is 3 to 6 rows of vertical T-8 lighting located on each side of all doors.

ATTENTI0N: INSTALLER

- **Do not turn on the lights inside the case unless operating temperature has been reached. Ballast failure may occur when the lights are operating without refrigeration in the case.**
- **Do not leave power on to the door and frame heaters unless operating temperature inside the case has been reached. Failure to follow this instruction could cause damage to the door frame.**
- **The light switch should be left off if refrigeration is turned off for periods longer than normal defrosting times. This prevents possible distortion and/or damage to non-metal parts from lighting heat.**

NOTE

Lights will remain on during defrost cycle.

Defrost Information

See "General-UL I&S Manual" for operational descriptions for each type of defrost control.

Defrost Control Chart

P5NGN Defrost Control Settings

Defrost Type	Defrosts Per Day	Defrost Duration (Min)	Term. Temp.
Off Time	1	60	-----

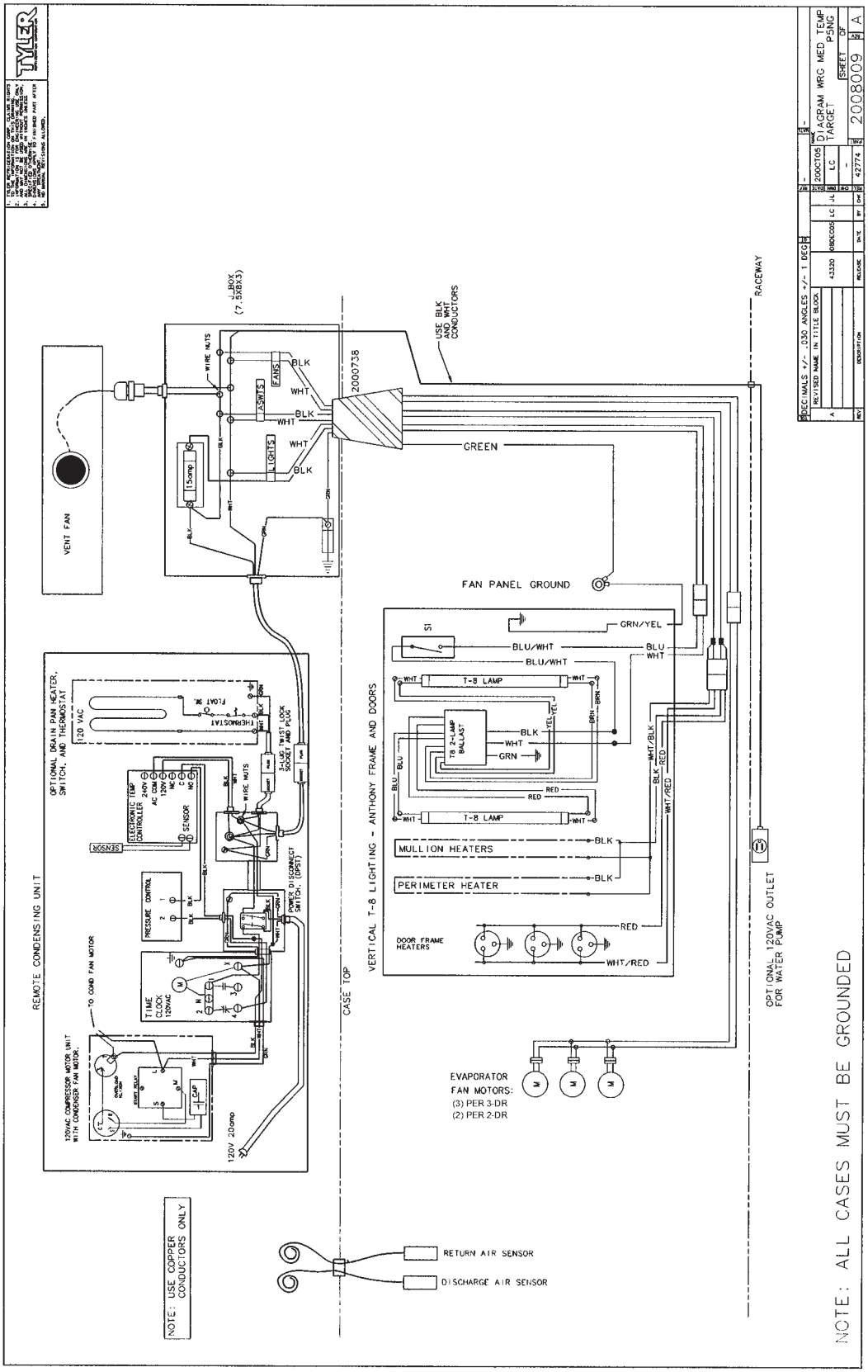
Most klixons are located on the right end of the evaporator coil. The diagrams on the next page show the location for each klixon.

WIRING DIAGRAMS

ELECTRICIAN NOTE - OVERCURRENT PROTECTION

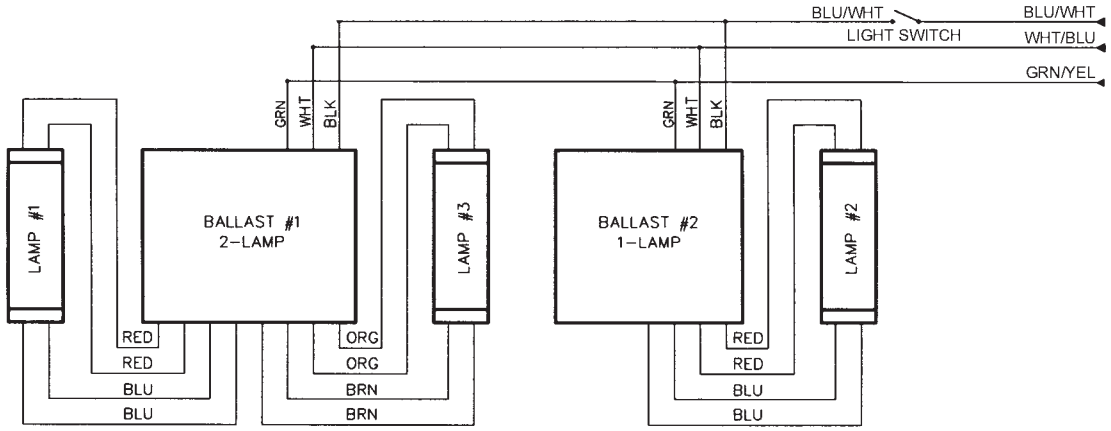
120V circuits should be protected by 15 or 20 Amp devices per the requirements noted on the cabinet nameplate or the National Electrical Code, Canadian Electrical Code - Part 1, Section 28. 208V defrost circuits employ No. 12 AWG field wire leads for field connections. On remote cases intended for end to end line-ups, bonding for ground may rely upon the pull-up bolts.

P5NGN Domestic & Export (50 Hz) Case Circuits



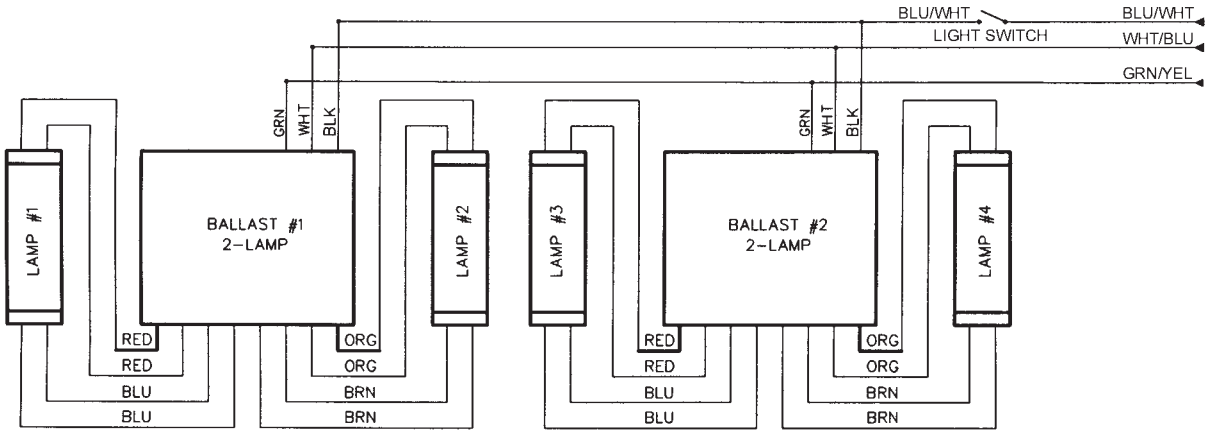
T-8 Prism Lighting Circuits with Anthony Connexxion™ System

2-Door Electronic Ballast Circuit



NOTES:
1. BALLAST 1 IS MOUNTED IN CENTER MULLION
2. BALLAST 2 IN MOUNTED IN CENTER MULLION

3-Door Electronic Ballast Circuit



NOTES:
1. BALLAST 1 IS MOUNTED IN LEFT MULLION
2. BALLAST 2 IS MOUNTED IN RIGHT MULLION

CLEANING AND SANITATION

See "Case Specific" and "General-UL/NSF" I&S Manuals for Cleaning and Sanitation information and instructions.

SERVICE INSTRUCTIONS

See "General-UL/NSF I&S Manual" for fan blade and motor replacement. Remove screws from bottom edge of front cladding and rotate cladding up while pulling it down to remove from the case and to access the electrical raceway.

See "Case Specific I&S Manual" for light servicing, door servicing, defrost & drain pan heater replacement, bumper replacement and patch end edge trim and overlay replacement.

Troubleshooting Remote Condensing Units

WARNING

Never work on electrically powered equipment while it is energized! Electrical shock could cause personal injury and/or death.

TROUBLE	COMMON CAUSE	REMEDY
1. Unit will not run	Blown fuse	Replace fuse.
	Low voltage	Check outlet with voltmeter. Voltage should be 115V or 220V (±10%).
	Inoperative motor or temperature control	Check connections.
2. Refrigerated section is too warm	Shelves overloaded; blocked air flow	Make sure items do not block the air flow.
	Thermostat set incorrectly	Check setting.
	Pressure control set incorrectly	Check setting.
	Case fans not operating	Check terminal block connections.
3. Refrigerated section too cold	Thermostat set incorrectly	Check setting.
	Pressure control set incorrectly	Check setting.
4. Unit runs all the time	Inadequate air circulation	Relocate cabinet or remove obstruction. Check installation requirements.
	Room temperature too warm	Ventilate room appropriately.
	Thermostat set incorrectly	Reset thermostat.
	Refrigerant charge low	Have unit serviced by a qualified service technician.
5. Noisy operation	Loose baffles	Tighten or brace baffles.
	Tubing contacting cabinet or other tubing	Move tubing.
	Cabinet not level	Level cabinet.
6. Frost or ice on evaporator coil	Defrost clock doesn't work	Check electrical conections. Have unit serviced by a qualified service technician.
7. Water dripping from case drain	Condensate drain clogged	Clear drain.
	Dissipator not functioning	Check electrical supply. Check float assembly.